ABSTRACT OF THE DISCLOSURE

An improved golf ball injection mold is characterized by upper and lower support plates each containing corresponding hemispherical cavities which define spherical mold cavities when the plates are brought together. A plurality of retractable core pins are arranged in each cavity for supporting a core of a golf ball. Fluid thermoplastic material is supplied to each cavity to form the cover layer on the golf ball core. A valve pin is arranged in a gate in the upper plate in the center of the upper hemispherical cavity adjacent to a pole of the golf ball being formed in the cavity. The valve pin is operable between extended and retracted positions relative to the gate to deliver the thermoplastic material to the cavity and a closed position intermediate of the extended and retracted positions to stop the flow of thermoplastic material during curing of the cover layer.